

**THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

Before Commissioners: Pat Apple, Chair
Shari Feist Albrecht
Jay Scott Emler

In the Matter of the Application of Norstar)
Petroleum Inc., for authorization to impose a) DOCKET NO. 17-CONS-3403-CVAC
Vacuum on its Hume Bros Lease located in)
The NW/4 of Section 34, Township 29 South,) CONSERVATION DIVISION
Range 41 West, Stanton County, Kansas.) License No.: 31652

**NOTICE OF FILING OF REBUTTAL TESTIMONY
OF BRADY PFEIFFER ON BEHALF OF NORSTAR PETROLEUM INC.**

Norstar Petroleum Inc. ("Norstar") hereby provides notice on this 16th day of November 2017, of the filing of the Rebuttal Testimony of Brady Pfeiffer on behalf of Norstar Petroleum Inc. dated November 16, 2017, a copy of which is attached hereto.

Respectfully submitted,

/s/ Steven D. Gough
Steven D. Gough, #09016
WITHERS, GOUGH, PIKE & PFAFF, LLC
O.W. Garvey Bldg., Suite 1010
200 W. Douglas
Wichita, KS 67202
Email: sgough@withersgough.com
(316) 266-5021 (telephone)
(316) 303-1018 (facsimile)
Attorney for Norstar Petroleum Inc.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 16th day of November 2017, I have caused to be served electronically, a true and accurate copy of the foregoing *Notice of Filing of Rebuttal Testimony of Brady Pfeiffer on behalf of Norstar Petroleum Inc.*, with the *Rebuttal Testimony of Brady Pfeiffer on behalf of Norstar Petroleum Inc.* attached, to:

Brady Pfeiffer
NORSTAR PETROLEUM INC.
88 Inverness Circle E, Unit F104
Englewood, Colorado 80112
Email: bpfeiffer@norstarpetroleum.com

David E. Bengtson
STINSON LEONARD STREET LLP
1625 North Waterfront Parkway, Suite 300
Wichita, Kansas 67206-6620
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Attorneys for White Exploration, Inc.

Jon Meyers
KCC CONSERVATION DIVISION
266 N. Main, Suite 220
Wichita, KS 67202
Email: j.meyers@kcc.ks.gov

AND VIA U.S. Postal Service, Postage Prepaid to:

Michael Duenes
ASSISTANT GENERAL COUNSEL
1500 SW Arrowhead Rd.
Topeka, KS 66604

/s/ Steven D. Gough

Steven D. Gough

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**REBUTTAL TESTIMONY OF BRADY PFEIFFER ON BEHALF OF
NORSTAR PETROLEUM INC.**

1 Q: Are you familiar with this docket and all pre-filed testimony submitted as of today,
2 November 15, 2017?

3 A: Yes, I have reviewed all documents and the pre-filed testimony of Lanny Butner, Kenneth
4 White, and Jim Hemmen.

5 Q: Do you have any evidence to suggest the degree of depletion of the Morrow Keyes Sand?

6 A: Yes. When the BFC Hume Bros #1-34 was drilled in October 1998, the Morrow Keyes
7 Sand tested 1260 psig on a drill stem test, see Exhibit A. When the CHT Hume Bros #3-
8 34 was completed in August, 2013, a bottom-hole pressure survey was run by Trilobite
9 Testing in order to measure the reservoir pressure of the Morrow Keyes Sand. This pressure
10 was measured at 472.6 psig, see Exhibit B. Most recently, when the CHT Hume Bros #3-
11 34 was worked on with a workover rig, in October 2017, overnight fluid levels were
12 measured via a tubing swab at 5210' and 5240' from surface, see Exhibit C. Averaging
13 these two measurements gives the static Morrow Keyes Sand fluid level in the wellbore at
14 5225', which is 167' above the top of the Morrow Keyes Sand perforations. This fluid level
15 can be used to calculate a static reservoir pressure as follows: 167 ft. x 0.433 psi/ft. (fresh-

1 water pressure gradient) = 72 psig. The exact reservoir pressure will be slightly different
2 than this calculation, because the fluid in the wellbore was 50% oil and 50% saltwater, but
3 it is a fair estimation. This shows that the Morrow Keyes Sand under the Hume Bros lease
4 has depleted 94% since 1998 and qualifies for the “nearly depletion” requirement under
5 K.A.R. 82-3-131(a).

6 Q: Did the Hume Bros lease experience mechanical difficulties between September 2016 and
7 April 2017 resulting in a steep drop of the monthly oil production rate?

8 A: Yes. All three Hume Bros wells were suffering from downhole pump related issues.
9 Between October 2016 and April 2017 Norstar performed eight pulling jobs on the three
10 Hume Bros wells combined. Aside from routine maintenance issues, the wells were
11 suffering from low pump efficiencies caused by solids and gas interference. One major
12 benefit of approved vacuum operations on this lease is the ability to draw more of the gas
13 up the casing before it can enter the pump and reduce the pumping efficiency. In addition
14 to the reservoir benefits, a vacuum on the casing will result in less gas interference with
15 the pump which will result in lower pump changes, lower costs to the lease and a longer
16 life of the wells.

17 Norstar was successful in returning the lease to normal pumping operations in April 2017.
18 Exhibit D shows the monthly oil production curve for the Hume Bros lease. These
19 mechanical failures were not the impetus behind Norstar’s filing for vacuum operations
20 and Norstar continues to seek vacuum approval even with the leases repaired and back to
21 producing at the expected rate and decline.

22 Q: Is the Hume Bros lease currently on compression?

1 A: Yes. Compression was installed on the Hume Bros lease on August 17, 2017. The
2 compressor is set up to pull the inlet pressure down to 0 psig, but will automatically shut-
3 down should the pressure drop below atmospheric.

4 Q: Has the produced and compressed gas been sold to DCP Midstream?

5 A: Yes. Norstar has been selling gas off the Hume Bros lease to DCP Midstream since it has
6 been on compression. Norstar is able to sell the gas off the Hume Bros lease at a marketable
7 quality and quantity.

8 Q: Has Norstar encountered any oxygen issues with the gas off the Hume Bros lease?

9 A: No. The sold gas is pipeline quality.

10 Q: Does Norstar anticipate encountering any oxygen issues with the gas off the Hume Bros
11 lease should vacuum operations be approved.

12 A: No. While vacuum operations does increase the risk of pulling oxygen into the commercial
13 gas stream, it is hardly “very likely” or a near “certainty” as testified by Mr. White on page
14 9, line 8 of his pre-filed testimony. Increasing the chance of oxygen interference in
15 Norstar’s gas production is a business decision on the part of Norstar and in no way affects
16 the status of this application, its approval or rejection, or the operations that White
17 Exploration conducts on its side of the lease line.

18 Q: Do you agree with Mr. White’s statement on page 8, lines 15-19 of his pre-filed testimony
19 that should the Hume Bros lease be approved for vacuum operations, then White
20 Exploration will be forced to place their offsetting wells on vacuum?

21 A: No. I am in agreement with the pre-filed testimony of Mr. Hemmen, specifically that
22 contained on page 5, lines 3-18. Through-out the testimony of Mr. Butner and Mr. White,
23 they assert that vacuum operations in this field is unwarranted because it will be an

1 operational and economic failure. Should this be the case, White Exploration has no reason
2 to protest this application since their operations and correlative rights will not be affected.
3 But then after, Mr. White states that his protest is based on having to install compressors
4 and inducing vacuums in order to protect their correlative rights. The basis of White
5 Exploration's protest and their subsequent arguments as to why this application should be
6 denied are contradictory and fallacious.

7 Q: Do you agree with the pre-filed testimony of Mr. White on page 7, lines 5-6 where he states
8 that compression on the White Exploration leases offsetting the Hume Bros lease "does
9 enhance the production of oil from those wells"?

10 A: Yes. All available evidence on these leases suggests that compression enhances the
11 production of oil from the wellbore and allows the gas to be sold at market conditions. It
12 is rational therefore to assume that by increasing the compression and lowering the pressure
13 on the reservoir, the enhancement on oil and gas production would increase in kind. The
14 science behind a reservoir's response to compression doesn't change when the pressure at
15 surface drops below atmospheric and creates a vacuum. All the reservoir feels is a stronger
16 drawdown of the pressure sink located in the bottom of the wellbore. An argument could
17 be made as to the effectiveness of increased compression and initiating vacuum operations,
18 but those arguments are not a matter for the KCC to regulate, but are a business risk for the
19 individual operators to weigh. However, any suggestion that compression will enhance
20 production but those enhancements will cease once a vacuum is imposed is contradictory
21 and not sound science. If nothing else, the fact that compression enhances production, as
22 stated by Mr. White, suggests that vacuum operations will be successful in furthering that
23 production enhancement.

1 Q: If vacuum approval is not granted, do you believe this will result in waste of otherwise
2 producible oil and gas reserves?

3 A: Yes.

4 Q: Can you quantify this waste?

5 A: Yes. Exhibit E is a spreadsheet summary of the revenue, costs and projections for the Hume
6 Bros lease. This exact Exhibit was provided to White Exploration during its data request
7 in March 2017, only updated to reflect the new gas sales. The values contained in the top
8 half of the Exhibit are actual production, cost and revenue numbers. They show that the
9 lease averages \$6324 per month in normal operating expenses. The bottom half of the
10 Exhibit projects the future cash flow of the lease without vacuum operations. Now that a
11 rental compressor has been installed on the Hume Bros lease, the LOE is increased by
12 \$1290 per month to \$7614. The projection suggest that the lease will become uneconomic
13 in 11 months and will produce 2660 barrels of oil and 4450 mcf of gas before being shut-
14 in. Exhibit F is the same spreadsheet but projects the lease production should vacuum
15 operations be approved. The projected costs will only increase by \$225 per month to
16 compensate for one extra load a month of saltwater being hauled off the lease. Norstar
17 expects the vacuum operation to increase the daily oil rate by 5 BOPD and the daily gas
18 rate by 10 MCFPD. This estimated production increase would result in 6250 barrels of oil
19 and 14270 mcf of gas being produced before the lease would be shut-in. The remaining life
20 of the lease is increased to 20 months. Therefore, the estimated waste of oil and gas
21 reserves, should the application not be approved, is the difference between the two
22 projections, which is 3590 barrels of oil and 9820 mcf of gas. Additional economic waste

1 beyond these numbers could be attributed to future repeat pulling jobs resulting from gas
2 interference, adding high costs to the wells and diminishing their productive life.

3 Q: Does Norstar request that the Commission grant its Application?

4 A: Yes.

5 Q: Does this conclude your testimony?

6 A: Yes.

ORIGINAL

TRILOBITE TESTING L.L.C.

OPERATOR : Bonneville Fuels Corp.
 WELL NAME: BFC Hume Bros. #1
 LOCATION : 34-29S-41W
 INTERVAL : 5395.00 To 5423.00 ft

DATE 10-3-98
 KB 3403.00 ft TICKET NO: 10938 DST #1
 GR 3392.00 ft FORMATION: Keyes
 TD 5423.00 ft TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30 Rec.	10993	10993	3227			PF Fr. 1706 to 1721 hr
SI 60 Range (Psi)	4250.0	4250.0	4995.0	0.0	0.0	IS Fr. 1721 to 1821 hr
SF 60 Clock (hrs)	12HR.	12HR.	Elct.			SF Fr. 1821 to 1921 hr
FS 120 Depth (ft)	5420.0	5420.0	5399.0	0.0	0.0	FS Fr. 1921 to 2121 hr

	Field	1	2	3	4
A. Init Hydro	2739.0	0.0	2721.0	0.0	0.0
B. First Flow	54.0	0.0	26.0	0.0	0.0
Bl. Final Flow	65.0	0.0	44.0	0.0	0.0
C. In Shut-in	1253.0	0.0	1257.0	0.0	0.0
D. Init Flow	97.0	0.0	50.0	0.0	0.0
E. Final Flow	108.0	0.0	104.0	0.0	0.0
F. Fl Shut-in	1253.0	0.0	1260.0	0.0	0.0
G. Final Hydro	2686.0	0.0	2642.0	0.0	0.0
Inside/Outside	O	O	I		

T STARTED 1415 hr
 T ON BOTM 1704 hr
 T OPEN 1706 hr
 T PULLED 2121 hr
 T OUT 0100 hr

TOOL DATA-----

Tool Wt. 1800.00 lbs
 Wt Set On Packer 25000.00 lbs
 Wt Pulled Loose 120000.00 lbs
 Initial Str Wt 73000.00 lbs
 Unseated Str Wt 75000.00 lbs
 Bot Choke 0.75 in
 Hole Size 7.78 in
 D Col. ID 2.25 in
 D. Pipe ID 3.80 in
 D.C. Length 352.00 ft
 D.P. Length 5038.00 ft

RECOVERY

Tot Fluid 190.00 ft of 190.00 ft in DC and 0.00 ft in DP
 1330.00 ft of Gas in pipe
 10.00 ft of H-O-C-M 40%Oil 60%Mud
 50.00 ft of H-O & G-C-M 30%Gas 25%Oil 45%Mud
 50.00 ft of G-M-O 50%Gas 25%Oil 15%Mud
 50.00 ft of Sly O & G-C-M-W 8%Gas 2%Oil 75%H2O 15%Mud
 0.00 ft of
 0.00 ft of .298 Res 66.8 Deg.
 0.00 ft of

SALINITY 25000.00 P.P.M. A.P.I. Gravity 39.80

BLOW DESCRIPTION

1st opening blow building blow built to 6.5"

ISI Bled off blow took 14 min NO blow back.

2nd opening fair blow built to B.O.B. in 9 min.

FSI Bled off blow took 10 min Had .75" blow back.

SAMPLES: NO
 SENT TO:

Test Successful: Y

MUD DATA-----

Mud Type Chemical
 Weight 9.10 lb/c
 Vis. 56.00 S/L
 W.L. 8.00 in3
 F.C. 0.00 in
 Mud Drop Y 25.0 ft

Amt. of fill 0.00 ft
 Btm. H. Temp. 124.00 F
 Hole Condition Good
 % Porosity 15.00
 Packer Size 6.75 in
 No. of Packers 2
 Cushion Amt. 0.00
 Cushion Type
 Reversed Out N
 Tool Chased N
 Tester Mike Colantonio
 Co. Rep. Ron Nelson
 Contr. Cheyenne
 Rig # 3
 Unit #
 Pump T.

EXHIBIT A

TEST HISTORY

#1 BFC Hume Bros. #1 Bonneville Fuels Corp.

ORIGINAL

Flag Points

(Min.) Pk P81g

A:	0.00	2721.27
B:	0.00	25.10
C:	15.75	44.18
D:	59.75	1257.35
E:	0.00	50.71
F:	59.25	104.09
G:	119.00	1200.06
H:	0.00	2542.58

RECEIVED
STATE CORPORATION COMMISSION

JAN 22 1971

CONSERVATION DIVISION
Wichita, Kansas

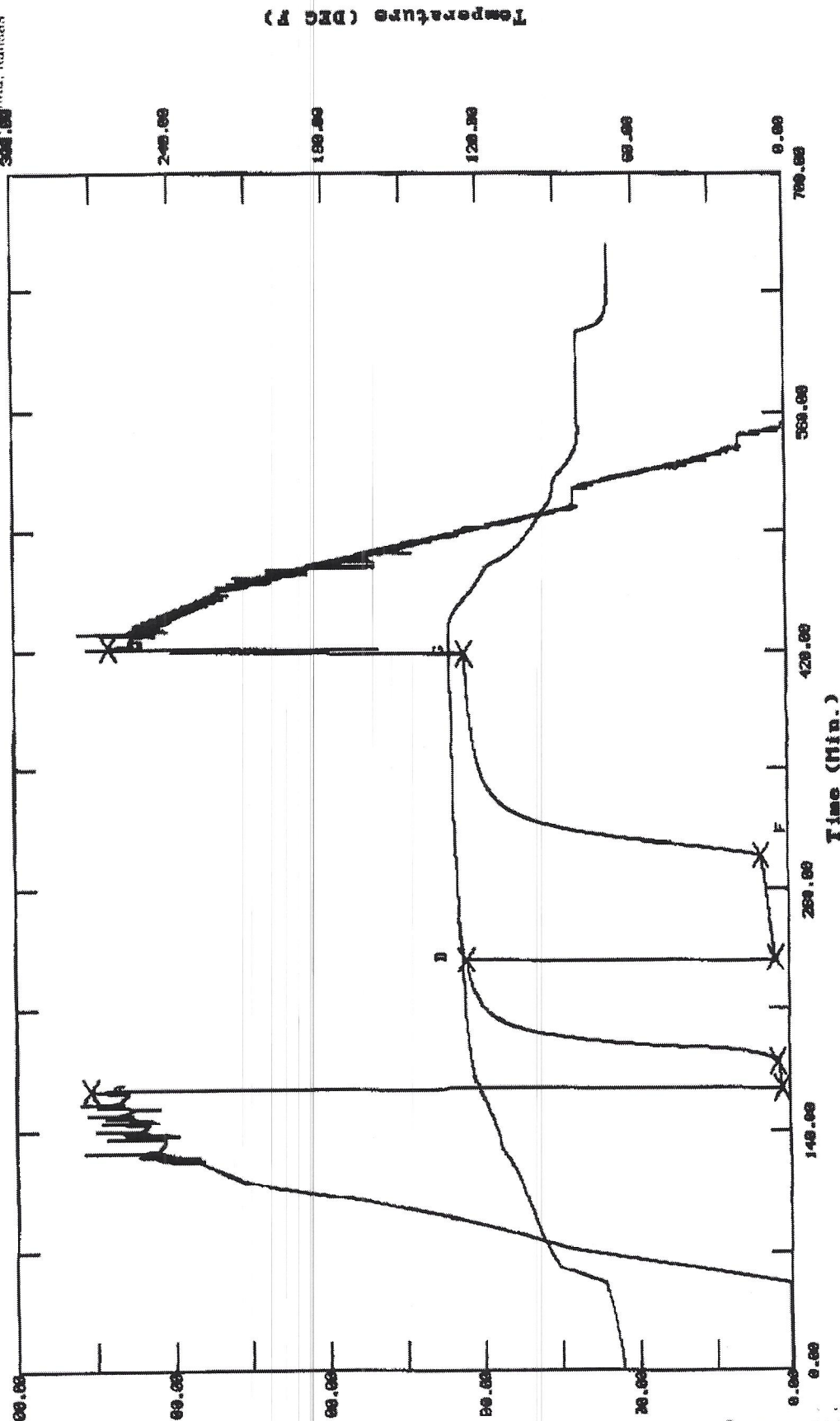


EXHIBIT A

Date: 10/3/98 Time: 11:43:56 AM

From: Tribble Testing L.L.C. Hays To: Bob Schwenning

Trilobite Testing

COMMENT SUMMARY

Oil Company: Standard Operating
Date of Test: August 26,2013

Well Location: Hume Bros 3-34
Serial#: 91024

#	Real Time	Comment	Pres.(psig)	Temp.(DEG.F)
1	08/26/2013 08:55:10		5.94	75.920
2	08/26/2013 09:00:35	start in hole	9.65	92.543
3	08/26/2013 09:01:50	@ 4900	246.48	119.359
4	08/26/2013 09:05:00	@ 5000	292.17	126.001
5	08/26/2013 09:08:05	@ 5100	337.72	129.025
6	08/26/2013 09:10:30	@ 5200	383.12	131.607
7	08/26/2013 09:13:20	@ 5300	428.09	134.859
8	08/26/2013 09:16:05	@ 5398	472.81	137.762
9	08/26/2013 09:42:10	Bottom Hole Pressure 472.626 psi	472.63	139.359

PRESSURE AND TEMPERATURE VS DELTA TIME

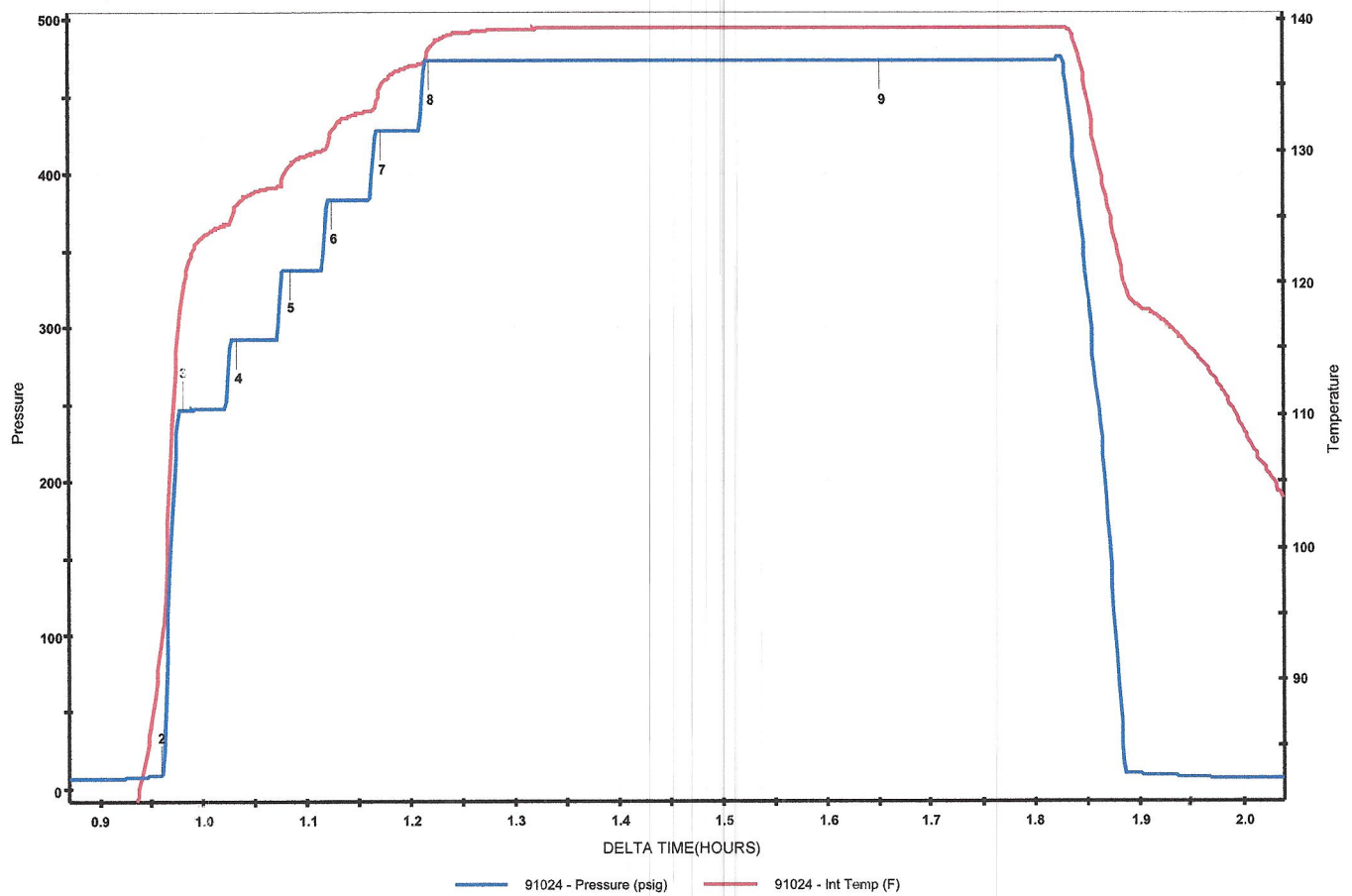
Company: Standard Operating

Location: Hume Bros 3-34

Date: August 26,2013

Serial# 91024

Maximum values: 91024 - Pressure 475.367 psig at 1.83 hrs 91024 - Int Temp 139.367 F at 1.82 hrs





88 INVERNESS CIR E, UNIT F104
ENGLEWOOD, CO 80112
OFFICE (303) 925-0696
FAX (303) 925-0699
www.norstarpetroleum.com

WORKOVER REPORT

CHT Hume Bros. #3-34 (API #: 15-187-21235-00-00)

1485' FNL & 1543' FWL

Sec. 34, T29S-R41W

Stanton County, KS

GL: 3384' **KB: 3395' (+11')**

RTD: 5475 ft LTD: 5439 ft (bottom logged interval, not a true TD measurement)

PBTD: 5426 ft.

Surf Csg: 38 jts 8 5/8", 24# new, set @ 1631 ft. Cmt w 575 sks, 425 Lite, 150 Common, 3% cc, 2% gel. SURFACE CASING FAILURE, unknown amount fell and blocked the hole.

Top of fish at 1828'. Had to be milled for well to be salvaged and drilling resumed.

Top jt. of surface casing was freely spinning as well while rig was ND BOP flange.

Prod Csg: 130 jts, 5 1/2", 15.5# new J-55 csg, set @ 5473 ft. cmt lower stage w/ 150 sks of EA-2.

DV tool @ 3531 ft: Cement upper stage with 300 sks ASC.

Completed in Keyes Sandstone, 5392'-5404'.

10/19/2017

MIRU Hurricane Services. TOOH with pump and rods. Pump looks good and sand screen on bottom of pump is clean. Send pump into shop for teardown. TIH with tubing, tag up on bottom (11.5' below EOT). Pull up and reset tubing. SION.

10/20/2017

RIH with swab and tag fluid at 5210'. Pull swab from SN but only recover some sand and grit in the swab cups, no fluid. Shutdown rig for weekend. RU Chaosland and dump 1000 gal 7.5% NEFE with surfactant and mutual solvent down tubing, followed by 100 gal diesel and 30 barrels of Hume lease oil. Dump 50 barrels of lease oil down casing. SIOW.

10/23/2017

Rig crew at company wide safety meeting in the morning, don't arrive on location until the afternoon. Tag weekend fill up at 5190' (200' of fill-up), casing on vacuum, recover 200' of oil. Swab 4.7 bbls of 95% oil over 3 hrs, pulling 150' of fluid per pull. SION.

10/24/2017

Tag overnight fill up at 5240' (150' over perms), 50% oil 50% water. 79# shut-in on casing. TIH with pump, 3' GA and rods. Load tubing and longstroke. Good pump action and pressured up to 300#, holding. Return well to production at 5 PM. Compressor pulling 0-5# on casing.

Hume Bros, Arroyo Field NW/4 Section 34-29S-41W, Stanton, County

Production Criteria →

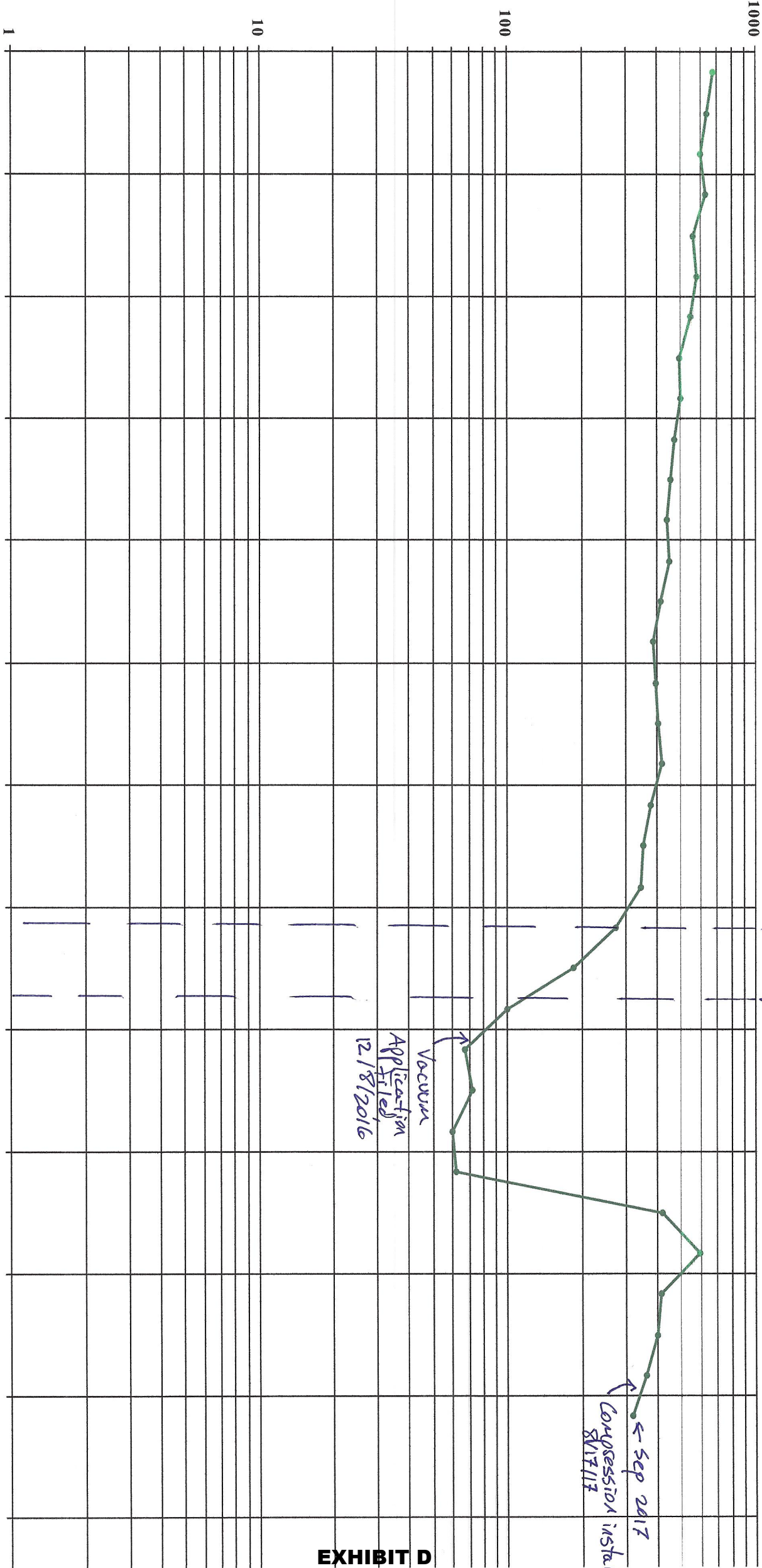
BOPM MCPPM BWPM GOR WOR WGR

01/99-09/17 MBO 166.1 0.0 MBW 4.7

Vacuum Test
9/1/16-10/21/16

← Sep 2017
Compressor installed,
8/17/17

Vacuum
Application
Filed,
12/8/2016



Hume Bros Lease Production History

Lease	Date	BOPM
Hume Bros	12/15/2014	671.34
Hume Bros	1/15/2015	637.94
Hume Bros	2/15/2015	602.87
Hume Bros	3/15/2015	627.92
Hume Bros	4/15/2015	557.78
Hume Bros	5/15/2015	582.83
Hume Bros	6/15/2015	546.09
Hume Bros	7/15/2015	490.98
Hume Bros	8/15/2015	501.00
Hume Bros	9/15/2015	472.61
Hume Bros	10/15/2015	452.57
Hume Bros	11/15/2015	437.54
Hume Bros	12/15/2015	449.23
Hume Bros	1/15/2016	415.83
Hume Bros	2/15/2016	387.44
Hume Bros	3/15/2016	395.79
Hume Bros	4/15/2016	405.77
Hume Bros	5/15/2016	420.80
Hume Bros	6/15/2016	377.38
Hume Bros	7/15/2016	354.04
Hume Bros	8/15/2016	344.02
Hume Bros	9/15/2016	273.88
Hume Bros	10/15/2016	183.70
Hume Bros	11/15/2016	100.19
Hume Bros	12/15/2016	66.79
Hume Bros	1/15/2017	71.80
Hume Bros	2/15/2017	60.12
Hume Bros	3/15/2017	61.79
Hume Bros	4/15/2017	420.84
Hume Bros	5/15/2017	594.52
Hume Bros	6/15/2017	412.49
Hume Bros	7/15/2017	399.13
Hume Bros	8/15/2017	360.72
Hume Bros	9/15/2017	317.30

Hume Bros Lease Short-Term Economic Forecast Without Vacuum

Lease NRI										0.7983547
Month	Lease Production	Hume 1 LOE	Hume 2 LOE	Hume 3 LOE	Lease LOE	Lease 8/8 Net Revenue	Lease W/ Net Revenue	Monthly Cash Flow		
Jan-16	415.83	\$1,714.71	\$1,830.32	\$1,830.37	\$5,375.40	\$12,689.51	\$10,130.73	\$4,755.33		
Feb-16	387.44	\$1,409.68	\$1,451.14	\$1,469.44	\$4,330.26	\$7,704.13	\$6,150.63	\$1,820.37		
Mar-16	395.79	\$1,723.72	\$1,749.07	\$1,787.34	\$5,260.13	\$10,378.33	\$8,285.59	\$3,025.46		
Apr-16	405.77	\$1,614.92	\$1,432.57	\$1,693.65	\$4,741.14	\$16,897.68	\$13,490.34	\$8,749.20		
May-16	420.8	\$1,421.94	\$1,738.28	\$3,973.94	\$7,134.16	\$12,866.68	\$10,272.17	\$3,138.01		
Jun-16	377.38	\$2,582.26	\$1,658.51	\$1,649.84	\$5,890.61	\$20,040.20	\$15,999.19	\$10,108.58		
Jul-16	354.04	\$1,528.08	\$1,548.80	\$1,723.73	\$4,800.61	\$12,605.14	\$10,063.37	\$5,262.76		
Aug-16	344.02	\$1,594.77	\$1,594.77	\$9,699.98	\$12,889.52	\$12,592.48	\$10,053.27	-\$2,836.25		
Sep-16	273.88	\$4,926.37	\$4,151.22	\$832.87	\$9,910.46	\$6,206.42	\$4,954.92	-\$4,955.54		
Oct-16	183.7	\$15,750.09	\$2,014.89	\$4,966.19	\$22,731.17	\$14,167.41	\$11,310.62	-\$11,420.55		
Nov-16	100.19	\$2,314.34	\$4,344.59	\$3,012.88	\$9,671.81	\$0.00	\$0.00	-\$9,671.81		
Dec-16	66.79	\$1,371.50	\$1,601.95	\$1,421.55	\$4,395.00	\$7,463.45	\$5,958.48	\$1,563.48		
TOTAL	3725.63	\$37,952.38	\$25,116.11	\$34,061.78	\$97,130.27	\$133,611.43	\$106,669.31	\$9,539.04		

Oil												Gas	
Resumed Monthly Production					300		425						
Monthly Decline Rate					0.045		0.01						
Forecasted Oil					Forecasted Gas								
Month	Production (BOPM)	Oil Price	Production (MCFPM)	Gas Price	8/8 Gross Revenue	Net WI Revenue	Average Monthly LOE	Monthly Cash Flow	Barrels Remaining	Economic Gas	Remaining		
0	300	\$48	425	\$2.50	\$15,463	\$11,776.71	\$7,614.72	\$4,161.99	300	425			
1	287	\$48	421	\$2.50	\$14,818	\$11,286.06	\$7,614.72	\$3,671.34	287	421			
2	274	\$48	417	\$2.50	\$14,202	\$10,816.73	\$7,614.72	\$3,202.01	274	417			
3	262	\$48	412	\$2.50	\$13,613	\$10,367.78	\$7,614.72	\$2,753.06	262	412			
4	251	\$48	408	\$2.50	\$13,049	\$9,938.31	\$7,614.72	\$2,323.59	251	408			
5	240	\$48	404	\$2.50	\$12,509	\$9,527.47	\$7,614.72	\$1,912.75	240	404			
6	229	\$48	400	\$2.50	\$11,993	\$9,134.45	\$7,614.72	\$1,519.73	229	400			
7	219	\$48	396	\$2.50	\$11,500	\$8,758.47	\$7,614.72	\$1,143.75	219	396			
8	209	\$48	392	\$2.50	\$11,027	\$8,398.76	\$7,614.72	\$784.04	209	392			
9	200	\$48	388	\$2.50	\$10,576	\$8,054.64	\$7,614.72	\$439.92	200	388			
10	191	\$48	385	\$2.50	\$10,143	\$7,725.40	\$7,614.72	\$110.68	191	385			
11	183	\$48	381	\$2.50	\$9,730	\$7,410.39	\$7,614.72	(\$204.33)					
12	175	\$48	377	\$2.50	\$9,334	\$7,109.00	\$7,614.72	(\$505.72)					
13	167	\$48	373	\$2.50	\$8,955	\$6,820.63	\$7,614.72	(\$794.09)					
14	160	\$48	369	\$2.50	\$8,593	\$6,544.70	\$7,614.72	(\$1,070.02)					
15	153	\$48	366	\$2.50	\$8,246	\$6,280.67	\$7,614.72	(\$1,334.05)					
16	146	\$48	362	\$2.50	\$7,915	\$6,028.03	\$7,614.72	(\$1,586.69)					
17	140	\$48	359	\$2.50	\$7,597	\$5,786.26	\$7,614.72	(\$1,828.46)					
18	133	\$48	355	\$2.50	\$7,293	\$5,554.90	\$7,614.72	(\$2,059.82)					
Total									2662	4449			

EXHIBIT E

FOOTNOTES AND ASSUMPTIONS:

*Lease 8/8 Net Revenue is post-tax

*Resumed monthly production is assumed to be 300 BOPM which is the rate prior to the pumping issues arising in August 2016.

*Monthly decline rate of 4.5% is determined from the monthly production for the time period of 3/1/2014 through 8/31/2016

*Oil Price is assumed at \$48/bbl

*New WI Revenue is 8/8 Gross Revenue discounted 4.6% for tax and then reduced by the Lease NRI of 79.83547%

*Monthly LOE is the average monthly lease operating cost for 2016 minus the abnormally high cost of Hume #1 in October and #3 in August, plus the compressor rental costs of \$1290 per month

